Measuring Area and Perimeter

Reporting Category Measurement
Topic Measuring area and perimeter, using U.S. Customary and metric units

Materials

- Construction paper shapes
- Inch-centimeter rulers
- Grid paper
- Measuring Perimeter (attached)
- Measuring Area (attached)
- Discovering the Area of Virginia (attached)

Vocabulary

area, perimeter, measure, inch, centimeter, square units

Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

1. Using construction paper shapes, demonstrate how to determine the perimeter of a shape by measuring each length of each side of the shape and adding all the lengths together. Remind students that they must add the lengths of *all* sides, no matter how small, and label the answer with the unit of measure they used.
2. Ask students to discuss how they would use perimeter to figure out the amount of paint that would be needed to outline a football field. Have student pairs or small groups discuss possible solutions. Then, have group representatives share their suggestions with the class.
3. Using shapes drawn on grid paper, demonstrate how to determine the area of a shape by counting the number of squares needed to cover the shape. Remind students that they must add all the squares and label the answer with the square unit of measure they used.
4. Have students draw their own shapes on grid paper and determine the area and perimeter of each one by counting the squares. Have students exchange work with partners to check their solutions.

Assessment

- **Questions**
    - Why is it important to measure all sides of a shape when measuring perimeter?
    - How do you calculate the perimeter of a square?
    - To determine how much material you would need to make a cover to fit the top of your bed exactly, would you use area or perimeter? Explain.

- **Journal/Writing Prompts**
    - You are going to build a fence around your back yard, and you need to know the quantities of materials you need to buy. Explain whether you would use area or perimeter, and why.
    - Explain how area helps a landscaper with his/her job.
- **Other**
    - Have students determine the area of your classroom by counting the floor tiles.
    - Have student complete the Measuring Perimeter and Measuring Area handouts.

Extensions and Connections (for all students)

- Discuss how area and perimeter are used in sports.
- Have students research the area of Virginia, comparing it with the areas of the bordering states. Distribute copies of the Discovering the Area of Virginia handout, and have students complete it.

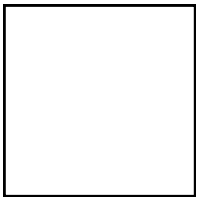
Strategies for Differentiation

- Use larger grid paper to assist students with fine motor issues.
- Have high-ability students draw shapes that correspond to given areas or perimeters.

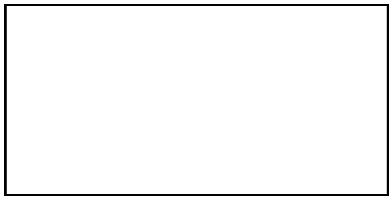
Measuring Perimeter

Name: _____ **Date:** _____

For each shape below, estimate the length of each side to the nearest *inch,* and calculate the **estimated perimeter**. Then, measure each side with a ruler, and calculate the **actual perimeter**.

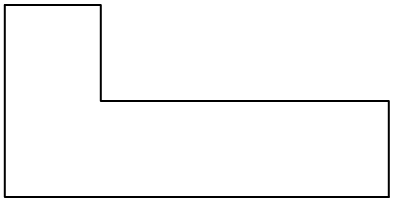


_____ _____
estimate actual



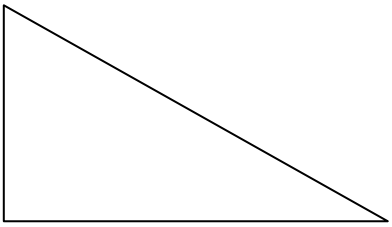
_____ _____
estimate actual

_____ _____
estimate actual



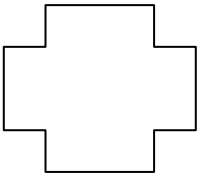
_____ _____
estimate actual

For each shape below, estimate the length of each side to the nearest *centimeter,* and calculate the **estimated perimeter**. Then, measure each side with a ruler, and **calculate the actual perimeter**.

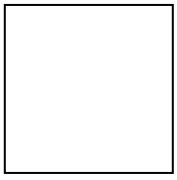


_____ _____
estimate actual

_____ _____
estimate actual



_____ _____
estimate actual

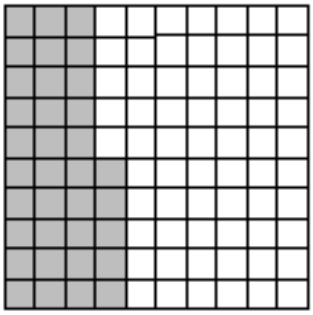


_____ _____
estimate actual

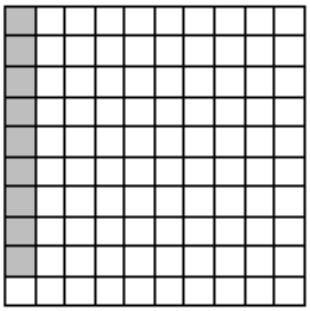
Measuring Area

Name: _____ **Date:** _____

Estimate and then calculate the **shaded area** of each object below in square units.

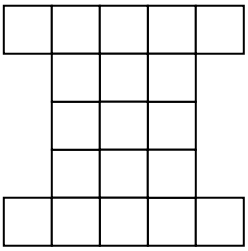


_____ _____
estimate actual

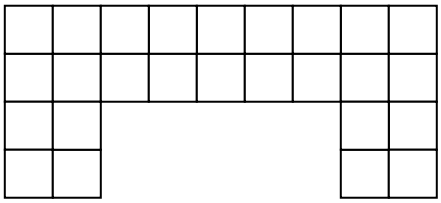


_____ _____
estimate actual

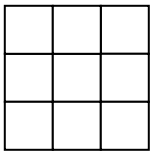
Estimate and then calculate the **area** of each object below in square units.



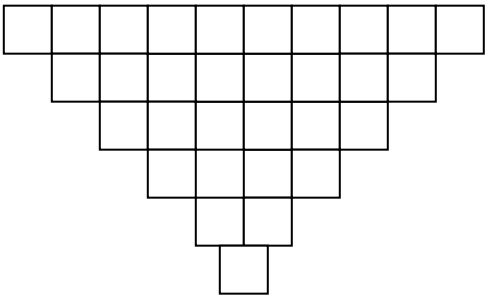
_____ _____
estimate actual



_____ _____
estimate actual



_____ _____
estimate actual

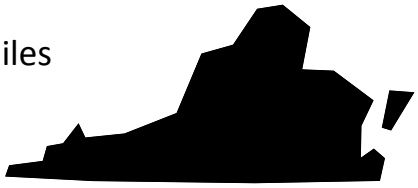


_____ _____
estimate actual

Discovering the Area of Virginia

Name: _____ **Date:** _____

Area of Virginia: _____ square miles



Areas of Virginia's neighboring states:

North Carolina: _____ sq. mi.

Maryland: _____ sq. mi.

West Virginia: _____ sq. mi.

Kentucky: _____ sq. mi.

Washington, D.C.: _____ sq. mi.

Tennessee: _____ sq. mi.

The state with the largest area: _____; area: _____ sq. mi.

The state with the smallest area: _____; area: _____ sq. mi.

States with areas similar to Virginia's:

STATES	AREA in sq. mi.